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09/680,492	10/06/2000	Shunpei Yamazaki	0756-2213	7599

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EXAMINER	
WILLIAMS, JOSEPH L	

ART UNIT	PAPER NUMBER
2879	

DATE MAILED: 08/25/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/680,492	Applicant(s) YAMAZAKI ET AL.
	Examiner Joseph L. Williams	Art Unit 2879

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *17 April 2003* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-96* is/are pending in the application.

4a) Of the above claim(s) *16-59* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-8,11-15,62,63,66,67,70,71,74,75,79-82,85-89 and 92-96* is/are rejected.

7)☒ Claim(s) *9,10,60,61,64,65,68,69,72,73,76,77,83,84,90 and 91* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a)☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)
2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3)☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *4-6,8,11* .
4)☐ Interview Summary (PTO-413) Paper No(s). _____ .
5)☐ Notice of Informal Patent Application (PTO-152)
6)☐ Other: .

DETAILED ACTION

Amendment B has been entered.

Election/Restrictions

1. Applicant's election without traverse of claims 1-15 and 60-96 in Paper No. 12 is acknowledged.

Priority

2. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Specification

3. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

Claim Rejections - 35 USC § 112

4. Claims 15, 82, 89, and 96 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claims 15, 82, 89, and 96, the claims disclose that the insulating film is comprised of Si, Al, N, O, and M (and M is further defined). However, the specification does not support all of the above metals in one film at the same time; rather having at least one of the metals, and even more than one, is supported by the specification.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claims 1, 2, 5, 6, 11, 13, 14, 62, 74, 78, 80, 81 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lupo et al. (US 6,461,885 B1) in view of Kobayashi et al. (US 6,575,800 B1).

Regarding claim 1, Lupo ('885) teaches in figures 1A-1K and in column 4, line 40 through column 5, line 65, a method of manufacturing an electric device, said method comprising the steps of: forming a plurality of TFTs (2) over a substrate (1); forming a plurality of pixel electrodes (5, 5b) each being connected to one of the plurality of TFTs; and forming an EL layer (6) over the plurality of pixel electrodes, and wherein the EL layer is continuous over the plurality of pixel electrodes.

Lupo ('885) does not disclose that the EL layer is formed by an ink jet method.

Further regarding claim 1, Kobayashi ('800) teaches in column 2, lines 20-27 an EL display wherein the EL layer is formed by an ink jet method, for the purpose of reducing the cost of manufacturing.

Hence, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the ink jet method of Kobayashi to apply the EL layer in Lupo for the purpose of reducing the cost of manufacturing.

Regarding claim 2, Lupo ('885) teaches in figures 1A-1K and in column 4, line 40 through column 5, line 65, a method of manufacturing an electric device, said method comprising the steps of: forming a plurality of TFTs (2) over a substrate (1); forming a plurality of pixel electrodes (5, 5b) each being connected to one of the plurality of TFTs; and forming an EL layer (6) over the plurality of pixel electrodes, wherein the EL layer is continuous over the plurality of pixel electrodes, and wherein the EL layer has a rectangular shape corresponding to each of the plurality of pixel electrodes.

Lupo ('885) does not disclose that the EL layer is formed by an ink jet method.

Further regarding claim 2, Kobayashi ('800) teaches in column 2, lines 20-27 an EL display wherein the EL layer is formed by an ink jet method, for the purpose of reducing the cost of manufacturing.

Hence, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the ink jet method of Kobayashi to apply the EL layer in Lupo for the purpose of reducing the cost of manufacturing.

Regarding claim 5, Lupo teaches in figures 1A-1K and in column 4, line 40 through column 5, line 65, a method of manufacturing an electric device, said method comprising the steps of: forming a plurality of TFTs (2) over a substrate (1); forming an

insulating layer (3) covering the plurality of TFTs; forming a plurality of pixel electrodes (5, 5b) each being connected to one of the plurality of TFTs; and forming an EL layer over the plurality of pixel electrodes, wherein the EL layer is continuous over the plurality of pixel electrodes, and wherein an insulating film for preventing transmission of alkali metals is formed in a top layer of the insulating layer (read SiO_2.) of insulating layer (3).

Lupo ('885) does not disclose that the EL layer is formed by an ink jet method.

Further regarding claim 5, Kobayashi ('800) teaches in column 2, lines 20-27 an EL display wherein the EL layer is formed by an ink jet method, for the purpose of reducing the cost of manufacturing.

Hence, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the ink jet method of Kobayashi to apply the EL layer in Lupo for the purpose of reducing the cost of manufacturing.

Regarding claim 6, Lupo teaches in figures 1A-1K and in column 4, line 40 through column 5, line 65, a method of manufacturing an electric device, said method comprising the steps of: forming a plurality of TFTs (2) over a substrate (1); forming an insulating layer (3) covering the plurality of TFTs; forming a plurality of pixel electrodes (5a, 5b) each being connected to one of the plurality of TFTs; and forming an EL layer (6) on the plurality of pixel electrodes, and wherein the EL layer has a rectangular shape corresponding to each of the plurality of pixel electrodes, and wherein an insulating film

for preventing transmission of alkali metals is formed in a top layer of the insulating layer (read SiO_2) of insulating layer (3).

Lupo ('885) does not disclose that the EL layer is formed by an ink jet method.

Further regarding claim 6, Kobayashi ('800) teaches in column 2, lines 20-27 an EL display wherein the EL layer is formed by an ink jet method, for the purpose of reducing the cost of manufacturing.

Hence, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the ink jet method of Kobayashi to apply the EL layer in Lupo for the purpose of reducing the cost of manufacturing.

Regarding claim 11, Lupo ('885) teaches the El layer is an organic layer.

The reason for combining is the same as for claim 1 above.

Regarding claim 13, Lupo ('885) teaches the insulating layer comprises the insulating film fro preventing transmission of alkali metals on an insulating film including an organic resin material. (column 4, line 56-58).

The reason for combining is the same as for claim 5 above.

Regarding claim 14, Lupo ('885) teaches the insulating film is comprised of Si (column 4, line 56-58).

The reason for combing is the same as for claim 5 above.

Regarding claim 62, Lupo ('885) teaches the El layer is an organic layer.

The reason for combining is the same as for claim 2 above.

Regarding claim 74, Lupo ('885) teaches the El layer is an organic layer.

The reason for combining is the same as for claim 5 above.

Regarding claim 78, Lupo ('885) teaches the El layer is an organic layer.

The reason for combining is the same as for claim 6 above.

Regarding claim 80, Lupo ('885) teaches the insulating layer comprises the insulating film for preventing transmission of alkali metals on an insulating film including an organic resin material. (column 4, line 56-58).

The reason form combining is the same as for claim 6 above.

Regarding claim 81, Lupo ('885) teaches the insulating film is comprised of Si (column 4, line 56-58).

The reason for combining is the same as for claim 6 above.

7. Claims 3, 4, 7, 8, 66, 70, 85, 87, 88, 92, 94, and 95 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lupo et al. (US 6,461,885 B1) in view of Kobayashi et al. (US 6,575,800 B1) and Yokoyama (US 6,281,634 B1).

Regarding claim 3, Lupo ('885) teaches in figures 1A-1K and in column 4, line 40 through column 5, line 65, a method of manufacturing an electric device, said method comprising the steps of: forming a plurality of TFTs (2) over a substrate (1); forming a plurality of pixel electrodes (5a, 5b) each being connected to one of the plurality of TFTs; forming an El layer over the pixels (6); wherein the layer is continuous over the pixel electrodes.

Lupo ('885) does not disclose the El layer comprising red, green, and blue layers, or the EL layer is formed by an ink jet method.

Further regarding claim 3, Yokoyama (634) teaches in figure 5, and EL device comprised of red, green, and blue layers, for the purpose of making a multi-color display.

Further regarding claim 3, Kobayashi ('800) teaches in column 2, lines 20-27 an EL display wherein the EL layer is formed by an ink jet method, for the purpose of reducing the cost of manufacturing.

Hence, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the color El layers of Yokoyama and the ink jet method of Kobayashi to apply the EL layer in the display Lupo for the purpose of making a multi-color display and reducing the cost of manufacturing.

Regarding claim 4, Lupo ('885) teaches in figures 1A-1K and in column 4, line 40 through column 5, line 65, a method of manufacturing an electric device, said method comprising the steps of: forming a plurality of TFTs (2) over a substrate (1); forming a

plurality of pixel electrodes (5a, 5b) each being connected to one of the plurality of TFTs; forming an El layer over the pixels (6); wherein the EL layer is rectangular shaped.

Lupo ('885) does not disclose the El layer comprising red, green, and blue layers, or the EL layer is formed by an ink jet method.

Further regarding claim 4, Yokoyama (634) teaches in figure 5, and EL device comprised of red, green, and blue layers, for the purpose of making a multi-color display.

Further regarding claim 4, Kobayashi ('800) teaches in column 2, lines 20-27 an EL display wherein the EL layer is formed by an ink jet method, for the purpose of reducing the cost of manufacturing.

Hence, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the color El layers of Yokoyama and the ink jet method of Kobayashi to apply the EL layer in the display Lupo for the purpose of making a multi-color display and reducing the cost of manufacturing.

Regarding claim 7, Lupo ('885) teaches in figures 1A-1K and in column 4, line 40 through column 5, line 65, a method of manufacturing an electric device, said method comprising the steps of: forming a plurality of TFTs (2) over a substrate (1); an insulating film (3) covering the TFT's; forming a plurality of pixel electrodes (5a, 5b) each being connected to one of the plurality of TFTs; forming an El layer over the pixels (6); wherein the layer is continuous over the pixel electrodes; and wherein an insulating

film for preventing transmission of alkali metals is formed in a top layer of the insulating layer (read SiO_2) of insulating layer (3).

Lupo ('885) does not disclose the El layer comprising red, green, and blue layers, or the EL layer is formed by an ink jet method.

Further regarding claim 7, Yokoyama (634) teaches in figure 5, and EL device comprised of red, green, and blue layers, for the purpose of making a multi-color display.

Further regarding claim 7, Kobayashi ('800) teaches in column 2, lines 20-27 an EL display wherein the EL layer is formed by an ink jet method, for the purpose of reducing the cost of manufacturing.

Hence, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the color El layers of Yokoyama and the ink jet method of Kobayashi to apply the EL layer in the display Lupo for the purpose of making a multi-color display and reducing the cost of manufacturing.

Regarding claim 8, Lupo ('885) teaches in figures 1A-1K and in column 4, line 40 through column 5, line 65, a method of manufacturing an electric device, said method comprising the steps of: forming a plurality of TFTs (2) over a substrate (1); an insulating film (3) covering the TFT's; forming a plurality of pixel electrodes (5a, 5b) each being connected to one of the plurality of TFTs; forming an El layer over the pixels (6); wherein the layer is continuous over the pixel electrodes; the EL layer has a

rectangular shape; and wherein an insulating film for preventing transmission of alkali metals is formed in a top layer of the insulating layer (read SiO_2) of insulating layer (3).

Lupo ('885) does not disclose the El layer comprising red, green, and blue layers, or the EL layer is formed by an ink jet method.

Further regarding claim 8, Yokoyama (634) teaches in figure 5, and EL device comprised of red, green, and blue layers, for the purpose of making a multi-color display.

Further regarding claim 8, Kobayashi ('800) teaches in column 2, lines 20-27 an EL display wherein the EL layer is formed by an ink jet method, for the purpose of reducing the cost of manufacturing.

Hence, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the color El layers of Yokoyama and the ink jet method of Kobayashi to apply the EL layer in the display Lupo for the purpose of making a multi-color display and reducing the cost of manufacturing.

Regarding claim 66, Lupo ('885) teaches the El layer is an organic layer.

The reason for combining is the same as for claim 3 above.

Regarding claim 70, Lupo ('885) teaches the El layer is an organic layer.

The reason for combining is the same as for claim 3 above.

Regarding claim 85, Lupo ('885) teaches the El layer is an organic layer.

The reason for combining is the same as for claim 7 above.

Regarding claim 87, Lupo ('885) teaches the insulating layer comprises the insulating film for preventing transmission of alkali metals on an insulating film including an organic resin material. (column 4, line 56-58).

The reason form combining is the same as for claim 7 above.

Regarding claim 88, Lupo ('885) teaches the insulating film is comprised of Si (column 4, line 56-58).

The reason for combining is the same as for claim 7 above.

Regarding claim 92, Lupo ('885) teaches the El layer is an organic layer.

The reason for combining is the same as for claim 8 above.

Regarding claim 94, Lupo ('885) teaches the insulating layer comprises the insulating film for preventing transmission of alkali metals on an insulating film including an organic resin material. (column 4, line 56-58).

The reason form combining is the same as for claim 7 above.

Regarding claim 95, Lupo ('885) teaches the insulating film is comprised of Si (column 4, line 56-58).

The reason for combining is the same as for claim 7 above.

Claims 12, 63, 75, and 79 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lupo et al. (US 6,461,885 B1) in view of Kobayashi et al. (US 6,575,800 B1) as applied to claims 1, 2, 5, and 6 respectively above, and further in view of Yamanobe (US 6,129,602).

Regarding claims 12, 63, 75, and 79, Lupo et al. ('885) in view of Kobayashi et al. ('800) discloses all of the claimed limitations except for the ink jet method using a piezo element.

Yamanobe ('602) teaches in column 11, lines 50-60, using a piezo element fro the ink jet method for the purpose of accurately controlling the droplets of the film being applied, and thus improve the manufacturing process.

Hence it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the piezo element of Yamanobe in the ink jet method of Lupo and Kobayashi for the purpose of accurately controlling the droplets of the film being applied, and thus improve the manufacturing process.

Claims 67, 71, 86, and 93 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lupo et al. (US 6,461,885 B1) in view of Kobayashi et al. (US 6,575,800 B1) as applied to claims 3, 4, 7, and 8 respectively above, and further in view of Yamanobe (US 6,129,602).

Regarding claims 67, 71, 86, and 93, Lupo et al. ('885) in view of Kobayashi et al. ('800) discloses all of the claimed limitations except for the ink jet method using a piezo element.

Yamanobe ('602) teaches in column 11, lines 50-60, using a piezo element fro the ink jet method for the purpose of accurately controlling the droplets of the film being applied, and thus improve the manufacturing process.

Hence it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the piezo element of Yamanobe in the ink jet method of Lupo and Kobayashi for the purpose of accurately controlling the droplets of the film being applied, and thus improve the manufacturing process.

Allowable Subject Matter

8. Claims 9, 10, 60, 61, 64, 65, 68, 69, 72, 73, 76, 77, 83, 84, 90, and 91 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: The prior art of record neither shows nor suggest the claimed gap between adjacent pixels.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joseph L. Williams whose telephone number is (703) 305-1670. The examiner can normally be reached on M-F (6:30 AM-3:00 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimeshkumar D. Patel can be reached on (703) 305-4794. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7382 for regular communications and (703) 308-7382 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

Joseph Williams

Examiner
Art Unit 2879
August 11, 2003